

## **Are Perceived Skills of Saudi Pediatric Practitioners to Manage Obese Child out of Standard?.**

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### **Abstract**

**Aim:** The aim of this study is to investigate the attitude of the health care providers working in main referral hospitals in Riyadh city regarding management of overweight and obesity among children and adolescents and to identify the main barriers of implementing prevention and control program. **Methods:** This is a cross-sectional survey targeting all paediatric practitioners including paediatric physicians and nurses who were available during the study period. A self-administered questionnaire was used which include demographic characteristics and the measures of attitudes, barriers, information source, previous training, future continuous training about management of obesity and overweight among child and adolescent. Data analysis was performed using SPSS package.

**Results:** findings showed that most physicians and nurses reported that childhood overweight and obesity are important public health problems and needs proper management (67.5%-76.5%) and considered as a future chronic disease risk (71.1%, 73.0%) that would affect the future quality of life (85.0%, 73.9%). Paediatricians were less likely to report low proficiency in behavioural management, providing guidance in parenting techniques and in addressing family conflicts (32.4%, 34.3, 37.8%, respectively); For nurses, very low proficiency were also reported in almost all the statements related to perceived skills, ranging from 8.5% to 17.6%, with a significant differences in proficiency when compared between paediatricians and nurses ( $p < 0.05$ ).

**Conclusion:** The study findings might help to identify several areas to be improved in promoting engagement of health care professionals in managing overweight and obesity among children. Raising burden of overweight and obesity require integration and collaboration between different key partners to empower direct role of health care providers at health care settings.

**Keywords:** Obesity, overweight, childhood, adolescents, Paediatrician, Saudi Arabia

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### **Introduction**

Childhood obesity and overweight are one of the most serious public health challenges of the 21st century. Globally in 2010 the number of overweight children under the age of five is estimated to be 42 million; close to 35 million of them are living in developing countries [1] However, the actual estimated prevalence of overweight and obese children is substantially lower than what is usually reported[2,3]. Overweight and obesity are not a matter of adults only, but boys and girls, children and adolescents have become victims too, with significant

reported rates [4]. Consequently, it is expected that the rates of coronary artery disease, type 2 DM, hypertension, dyslipidaemia, and fatty liver, obstructive sleep apnoea, and certain types of cancer will increase in the coming decades particularly in developing countries [5-9].

Studies of paediatric health care providers and their way of managing obese children show indications of inadequate management in different international settings [10]. Some authors referred it to the inadequate training of the health care providers in the management of obese children or adolescents which further leads to either under-

diagnose or under-treatment of the obese subject [11]. Consequently, many recommendations were developed to show the importance of training for the health providers in concern with this issue and to empower them for better management and prevention of overweight and obese children and adolescents [12,13].

Several studies have been conducted in Saudi Arabia highlighting the high rates of obese and overweight children and adolescents as well as in adults; however, none of these studies showed the gap in the management process, particularly from the point of view of health providers; thus, it has not been investigated yet. Moreover, many healthcare providers, including those in obesity work, are unaware of the high prevalence of obesity in children and adults in Saudi Arabia and the other Gulf states [14]. The epidemic in this location is more severe than in any other part of the world, [15] so the study of the problem and potential solutions in Saudi Arabia is of great importance. aim of this study is to investigate the attitude of the health care providers working in main referral hospitals in Riyadh city in managing overweight and obese child or adolescents and to identify the main barriers of implementing an obesity prevention program.

## **Material and Method**

### ***Study Population and Design***

This is a cross-sectional survey targeting all paediatric practitioners including paediatric physicians and nurses who were available during the study period. The setting of the study included the three main tertiary hospitals in Riyadh City, Saudi Arabia: King Abdul Aziz Medical City at the National Guard Health Affairs, King Fahad Medical City which is run by the Ministry of Health, and the Army Forces Hospital. The study proposal was approved by the IRB in the King Abdullah International Medical Research Center (KAIMRC). All the participants in this survey were consented and the objectives of the study were clearly explained.

The data collection tool (self-administered questionnaire) was the same English validated questionnaire used in a similar previous studies conducted in the USA [16,17]. However, some questions were excluded from the original instrument where found not applicable to the local context of Saudi Arabia. Our pilot study of the final version of questionnaire did not show significance effect of the removed questions from the original one where the Cronbach alpha reliability test was 0.76. The final version of the self-administered questionnaire consists of two main sections: the first section about the personal demographic and background characteristics; and the second section aim to measure paediatric practitioners and nurses on management of obesity and overweight among child and adolescent. These measures consist of five domains addressing their attitudes, barriers, information source, previous training, and their future continuous training. For most domains, the level of respondents were measured on

five points Likert scale as “most of the times”, “often”, “sometimes”, “rarely” and “never”. The cut-off point of accepted positive response for each domain as reported by the respondents on the scale was “often” or “most of the times”.

The following section describes the domains/items of the questionnaire.

### ***Attitude***

This domain has been assessed by set of questions asking participants about ‘the need of treatment for children and adolescents’; ‘overweight children and adolescents will outgrow their overweight’; ‘children and adolescents are more amenable to treatment than adult overweight’; ‘overweight childhood and adolescent have an effect on chronic diseases and quality of life in future’.

### ***Barriers***

Nine items were used to assess and identify the perceived barriers on treatment approaches, including the lack of one or more of the following: patient motivation, parent involvement in treatment, clinician’s time, reimbursement, clinician’s knowledge about treatment, treatment skills, support services and concern about precipitating eating disorders. Participants were also asked how they assess the importance of each barrier to reach an effective treatment.

### ***Source of Information***

In this domain, participants were asked about the most frequently used sources of information to help in assessing the level of overweight and obese children or adolescent and the approach applied for the treatment. These sources included questions related to their under graduate/post graduate training program previously received, reading specifically and professionally related journals or articles, attending workshops/seminars/programs, using some reference textbooks, using their past experience or making benefit of the available mass media, utilizing the web sites or even sessions from pharmaceutical companies.

### ***Preferred method of education***

Participants were asked to answer “Yes” or “No” responses for their preferred method of education. These include questions about their preferred professional and institutional guidelines; continuous medical education (CME) courses at national and local meetings; web sites; telephone conferences; televised lectures; videotapes and textbooks.

### ***Proficiency and interest in future training***

A set of questions were used to assess perceived skills of the participants for treating overweight children. These include items related to the uses of management strategies, modification of patient diet, modification of patient physical activity, modification of patient sedentary behaviours, using some guidance in parenting technique, addressing family conflicts and assessment of the degree

of overweight. In this domain, the participants' responses were measured on three points Likert scale as "low", "moderate", and "high".

### Data Analysis

Data analysis was performed using SPSS statistical computing package (SPSS software, version 20, USA). Frequency distributions and percentage of respondents were calculated for all domains. Then, the Chi Square ( $X^2$ ) statistic was used to test if there is a statistical significant differences between physicians versus nurses for the domains i.e. attitudes, barriers, perceived management skills /training interests, and preferred education methods, and statistical significant p value were set at  $< 0.05$ .

### Results

#### Respondents' characteristics

From the total of 210 questionnaires distributed to the professionals in concern at these three hospitals, 154 were collected with a response rate of around 73%; 40 were paediatricians and 114 were nurses. Moreover, the response rate was lower among paediatricians than among nurses (66.6% versus 75.2%, respectively).

#### Respondents Attitudes

The majority of respondents in the two studied professional

groups (paediatricians and nurses, respectively) felt that adolescent overweight was a condition that needed treatment (67.5%-76.5%), and considered as a future chronic disease risk (71.1%-73.0%) as well it would affect the future quality of life (85.0%-73.9%), as seen in table 1. More than half of the health providers felt that childhood overweight was a condition that needed treatment (57.5%-58.8%) and either childhood or adolescent overweight was more amenable to treatment than adult overweight (85.3%, 56.4% and 55.0%, 58.9%, respectively). Around one third of participants felt that overweight children or adolescents would outgrow being overweight. However, no significant differences were found among paediatricians compared to nurses in all of the attitude statements ( $p>0.05$ ). Paediatricians were less likely to agree with some of the statements particularly those related to the need of treatment for overweight adolescents. In general term, regarding the attitudes it shows no statistically significant differences between physicians versus nurses, as seen in table 1.

**Table 1**

#### Perceived Barriers

Table 2 show the most frequent barriers cited by practitioners. The overall barriers cited by them were lack of patient motivation (84.1%) or lack of parent involvement (77.3%), and followed with the lack of support services

**Table I.** Practitioner attitudes toward managing overweight in children and adolescents.

Attitudes	Percentage responding "most of the time" and "Often"						
	paediatrician		nurses		total		P
	No.	%	No.	%	No.	%	
Childhood overweight needs treatment.	23	57.5	68	58.8	91	59.9	0.267
Adolescent overweight needs treatment.	27	67.5	85	76.5	102	74.1	0.652
Overweight children outgrow their overweight	13	32.5	38	34.4	51	34	0.853
Overweight adolescents outgrow their overweight	10	27.8	43	41.0	53	37.6	0.431
Childhood overweight is more amenable to treatment than adult overweight.	21	58.3	62	56.4	83	56.8	0.073
Adolescent overweight is more amenable to treatment than adult overweight	22	55.0	63	58.9	85	57.8	0.132
Overweight effect on chronic disease in the future.	27	71.1	81	73.0	108	72.5	0.670
Overweight in childhood or adolescence effect on the quality of life in the future.	34	85.0	82	73.9	116	76.8	0.061

**Table II.** Perceived barriers in the treatment of overweight children and adolescents.

Barrier	Percentage responding "most of the time" and "Often"						
	paediatrician		nurses		total		P
	No.	%	No.	%	No.	%	
Lack of patient motivation	33	84.6	94	83.9	127	84.1	0.790
Lack of parent involvement	30	76.9	86	77.5	116	77.3	0.513
Lack of clinician time	21	53.8	58	52.7	79	53.0	0.477
Lack of reimbursement	18	54.5	53	49.5	71	50.7	0.729
Lack of clinician knowledge	19	51.4	51	46.4	70	47.6	0.661
Lack of treatment skills	24	63.2	57	52.8	81	55.5	0.613
Lack of support services	24	64.9	64	58.7	88	60.3	0.595
Eating disorder concerns	19	51.4	66	62.3	85	59.4	0.141

(60.3%). Near half of paediatricians and nurses cited that the lack of clinician time, lack of reimbursement, lack of clinical knowledge and eating disorder concerns were the important barriers. Around two thirds of the paediatricians and over half of the nurses identified treatment futility as a barrier either most of the time or often. In general, lower percentages of nurses mainly identified treatment barriers compared with paediatricians. No statistical significant differences found between physicians and nurses regarding their perception of barriers in managing obesity and overweight among children and adolescents ( $p > 0.05$ ).

**Table 2.**

**Perceived skill level and interest in training**

Overall, paediatricians were less likely to report low proficiency in behavioural management, providing guidance in parenting techniques and in addressing family conflicts (32.4%, 34.3, 37.8%, respectively); likewise, they reported very lower proficiency in addressing patient diets and eating practices, patients physical activities, patient sedentary behaviour and the assessment of the overweight degrees (19.4%, 22.9%, 19.4%, 20.0, respectively). For nurses, very low proficiency were also reported in almost all the statements related to perceived skills, ranging from 8.5% to 17.6%. The significant differences ( $p < 0.05$ ) were found in proficiency when compared between paediatricians and nurses mainly in those aspects related to the use of behavioural management strategies, guidance in parenting techniques, and addressing family conflicts, as shown in table 3.

As long as the interest in training is concerned, both groups expressed moderate interest in additional training for all of the skill areas, and were more among nurses than paediatricians (Table3). Over half of the nurses' respondents expressed interest in additional training in the use of behavioural management strategies and patient diet or eating practices. Paediatricians were less likely interested in training related to obesity management. The differences were significant between nurses and paediatricians in most of the categories ( $p < 0.05$ ).

**Table 3.**

**Preferred continuous education methods**

Respondents were asked which methods they would use to improve their ability to treat overweight children and adolescents. Across the two professional groups, the preferred method was professional guidelines (91.0%), followed by computer-based programs (88.8%), text books (86.6%) and CME courses at national meetings (82.6%), while the least preferred method was telephone conferences (29.9%), as seen in table 4. Significant differences in preferred methods were also observed between paediatricians and nurses in both computer programs and telephone conferences as sources of information on evaluation and treatment of paediatric obesity ( $p < 0.05$ ).

**Table 4.**

**Discussion**

With the tremendous development in technology in

**Table III:** perceived skill level in obesity management and training among practitioners

Perceived Skill	% Low Proficiency Level							% High Interest in Training						
	Paediatrician		Nurses		Total			Paediatrician		Nurses		Total		
	No.	%	No.	%	No.	%	P	No.	%	No.	%	No.	%	P
Use of behavioural management strategies.	14	37.8	12	8.5	26	18.7	0.001	13	40.6	40	75.4	53	43.4	0.016
Modification of patient diet /eating practices	7	19.4	9	8.5	16	11.3	0.086	14	45.2	51	57.3	65	54.2	0.001
Modification of patient physical activity.	8	22.9	11	10.7	19	13.8	0.112	16	50.0	44	51.2	60	50.8	0.081
Modification of patient sedentary behaviour.	7	19.4	18	17.5	25	17.9	0.562	11	35.5	42	48.3	53	44.9	0.066
Guidance in parenting techniques.	12	34.3	12	12.4	24	18.2	0.012	16	51.6	43	47.3	59	48.4	0.002
Addressing family conflicts/concerns	12	32.4	18	17.6	30	21.6	0.035	12	41.4	41	45.1	53	44.2	0.060
Assessment of the degree of overweight	7	20.0	16	15.8	23	16.9	0.273	15	46.9	46	51.7	61	50.4	0.030

**Table IV:** preferred education among health care professionals for receiving information on evaluation and treatment of paediatric obesity

Preferred Education Methods	% High interest in training						
	paediatrician		nurses		total		
	No.	%	No.	%	No.	%	p
Professional guidelines	34	91.9	98	90.7	132	91.0	1.000
Government guidelines	24	64.9	70	68.0	94	67.1	0.839
CME courses at national professional meetings	27	75.0	87	85.3	114	82.6	0.201
CME courses at local meetings	26	70.3	82	80.4	108	77.7	0.250
Computer programs/web sites	26	70.3	101	95.3	127	88.8	0.000
Telephone conferences	6	16.7	34	34.7	40	29.9	0.029
Televised lectures	23	63.9	82	78.8	105	75.0	0.116
Videotapes	20	55.6	88	83.8	108	76.6	0.001
Textbooks	31	86.1	92	86.8	123	86.6	1.000

the 21st century, the world faces an urgent challenge of overweight and obesity [18]. The burden of this public health problem starts each year increases to affect heavily children and adolescents [19].

In this study, findings showed that physicians and nurses agree that childhood overweight and obesity are important public health problems and they would like getting more training in methods to tackle this health problem; however, they are still facing a number of barriers to manage this condition effectively. It has been reported that, although health professionals should play an important role in the prevention and treatment of excess weight and obesity, their capabilities to manage such cases with overweight or obesity is limited [20]. The study findings showed that Paediatric practitioners expressed that child and adolescent obesity needs urgent interventions to overcome the barriers that prevent them from providing effective treatment, specifically the expressed concern of paediatric practitioner in our study is still lower than findings reported in other study by Story et al., (2002) in the United State [16]. This is likely to be a cultural difference between Saudi Arabia and the US in whether childhood/adolescent overweight is accepted in our local as a normal part of child development where, some people locally considered obesity and overweight as desirable and sign of beauty and in some as a feature of affluence [21].

Our respondents' perceived low proficiency in counseling-related skills needed to manage obesity and overweight effectively. Physicians who were aware of the low proficiency level in obesity management were significantly less likely to express the needs for training in this part. It seems that topics related to assessment and counseling strategies and behavioural management techniques for paediatric obesity treatment and management are not given enough attention in the medical and nursing schools curricula or professional continuous training. Some researchers have indicated to the significance of obesity and how medical school curricula should reflect the management and treatment of this issue [19,22], showing an improvement need in the knowledge and resources to manage and treat obese children, but some barriers still exist including for example the lack of time and compensation for the practitioners [23]. A recent study in the United State have illustrated that the importance of education and training evidence-based assessment and counseling techniques [24]. Therefore, directions and priorities for training, education, and advocacy efforts are necessary mainly for nurses as well as for health practitioner. This type of information could be incorporated into pre-professional education programs. In our study a high proportion of practitioners identified continuing education at local and national meetings and professional guidelines or standards of practice as preferred educational methods.

Among the most prominent barriers identified and cited by the majority of paediatricians and nurses in this study were lack of patient motivation and lack of family involvement.

Other barriers such as lack of support services, lack of clinician time, lack of reimbursement, lack of clinical knowledge and eating disorder are considered of less important barrier. Tershakovec and colleagues [25], has found that paediatricians in a paediatric obesity referral clinics were reimbursed for the treatment of obesity with low frequency of the time. Other survey also has found that reimbursement is a major deterrent to the treatment of obesity [26]. Thus, modification in the current management care policies in child obesity and adolescence are commented by the health care professionals to be changed [27]. The reason for this is that no enough time and resources were given to provide obesity services for children and adolescents. Thus, more advocacy efforts and legislative initiatives are needed to ensure coverage for the delivery of both preventive and treatment services with adequate skills and number of health providers in concern [28, 29].

Our study found that both paediatricians and nurses agreed that childhood/adolescent overweight is an important public health problem. Nevertheless, there was a larger percentage among paediatricians than nurses expressed having a low skill level in management strategies for patients and their families. Both paediatricians and nurses expressed moderate interest in additional training for all of the skill areas, mainly is more among paediatricians who expressed less interest in training than nurses.

It was not explained why many practitioners did not express their interest in training regarding obesity assessment. This is perhaps because paediatricians see their health provider role is more as a clinician practitioner than as a behaviour management expert [16]. A study conducted among the Child Health Care (CHC) nurses conceptions of their preventive work with childhood overweight and obesity in CHC centers in Sweden showed that personal priorities, knowledge, responsibility and the absence of resources and cooperation, as well as the lack of uniform guidelines for preventing and managing childhood overweight and further a deficient management organization.<sup>12</sup> Other reports have shown the importance of having community programs that include schools and dieticians, among other resources, can be effective in promoting behaviour change in overweight children/adolescents and their families [30,31]. Unfortunately, such programs are not yet established in Saudi Arabia; however, if it exists at the level of the schools for example, it would be likely effective in altering behaviour with parent's participation in these programs. Such programs allow other professionals to share the responsibility for motivating behaviour change in overweight children/adolescents including paediatricians and nurses.

Although, training and continues education sessions in the treatment and prevention of obesity and overweight are of paramount important [19], physicians expressed low rank on lack of having effective obesity treatment as one of the top three barriers.

Overall, paediatricians were less likely to cite low proficiency in behavioural management, providing guidance in parenting techniques and in addressing family conflicts but more likely to identify low proficiency in addressing patient leading behaviours to gain weight and become obese. Significant differences were found in proficiency between paediatricians and nurses as to the use of behavioural management strategies, guidance in parenting techniques, and addressing family conflicts. Similar findings were shown in other studies where practitioners commonly expressed low proficiency and confidence in their ability to help patients change behaviours [16, 32, 33]. However, better and more consistent assessment of obesity could increase awareness of the extent of the obesity problem, provide a basis for monitoring individuals and populations, and provide early prevention and treatment efforts.

Although the results of this study identify issues in the provision of care to overweight children and adolescence and highlight areas for additional training, we need further study to be conducted to assess the attitudes and training needs of physicians and nurses working in primary care practices where they would encounter and treat overweight children/adolescents on a more regular basis. Moreover, educational programs those teach counseling techniques in medical and residency training for physicians and in undergraduate and graduate training for nurses will help develop skills of future practitioners. In addition, short courses are needed to provide opportunities for current practitioners to improve proficiency. Continuing education could provide a readily accessible forum for training in these topic areas.

Additional research that replicates and extends the findings from this study should be conducted. Consequences of widespread and severe obesity for Saudi society are serious, and the effectiveness of the Saudi medical system to respond will be extremely important for the rest of the world. In the face of a frightful crisis, Saudi healthcare providers have an opportunity to light the way for their colleagues worldwide. Thus, we also recommend studying attitudes of these very important front-line providers.

## **Conclusions**

The findings in this study might help to target several areas in which training and enhancement of having effective approach in promoting engagement of health care professional in managing overweight and obese children. Thus, adequate and consistent assessment of obesity and obesity-related health conditions will improve the identification of children at risk. Improved treatment will depend on the development of therapies that can be applied effectively and efficiently in any health care settings which should also extend to include the primary health care settings.

To control the raising burden of overweight and obesity will require integration and collaboration between

different key partners including community, schools and to control the environment in addition to enforce the direct role of health care providers at health care settings.

## **Conflict of Interest Statement**

No conflict of interest was declared.

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